# Status and lectotypification of *Craspedia gracilis* Hook.f. (Asteraceae: *Gnaphalieae*)

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## Summary

Rozefelds, A.C. (2013). Status and lectotypification of *Craspedia gracilis* Hook.f. (Asteraceae: *Gnaphalieae*). ***Austrobaileya* 9(1): 130–135**. The identity of *Craspedia gracilis* Hook.f. is determined and it is shown to be conspecific with *C. coolaminica* J.Everett & Joy Thomps. which, being the younger name, is therefore placed in synonymy. The identity of *Craspedia richea* var. *linearis* Hook.f. is also resolved and it is shown to be a synonym of *C. gracilis*. Lectotypes of *C. gracilis* and *C. richea* var. *linearis* are designated and illustrated.

Key Words: Asteraceae, Gnaphalieae, *Craspedia, Craspedia coolaminica, Craspedia gracilis, Craspedia richea* var. *linearis,* Australia flora, Tasmania flora, taxonomy, billy buttons

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## Introduction

Previous studies of *Craspedia* G.Forst. by Rozefelds (2002) and Rozefelds *et al.* (2011), have resolved the nomenclature of species of *Craspedia* described from Tasmania; however, the status of two taxa described by Hooker (1847), *C. gracilis* Hook.f. and *C. richea* Cass. var. *linearis* Hook.f, has been unclear.

Cassini (1818) recognised that *Richea glauca*, described by Labillardière (1800) from Tasmania, should be transferred to *Craspedia*. His new combination, *Craspedia richea* Cass.; however, is a *nomen illegitimum*, as recognized by Chapman (1991), since it was based on *Richea glauca* Labill. whose epithet should have been adopted. Sprengel (1826) successfully transferred this species to *Craspedia*, i.e. *C. glauca* (Labill.) Sprengel.

Hooker (1847) described *Craspedia gracilis* Hook.f. from the Middlesex Plains [Tasmania], although he later, in *'Flora Tasmaniae'*, reduced *C. gracilis* to a variety, *C. richea* var. *gracilis* Hook.f. Curtis (1963: 346) recognised that '*C. glauca* included several further spp. and varieties [that] have been named'. She recognised four varieties including the new combination *C. glauca* var. *gracilis*, but as the original reference and dates of publication for this taxon were not cited, it is invalid (Chapman 1991).

Hooker (1847) also recognised two new varieties of *Craspedia richea*. The status of *C. richea* var. *glabrata* Hook.f. from the western mountains of Tasmania, was examined by Rozefelds (2002) and a new combination *C. glabrata* (Hook.f.) Rozefelds was proposed. The status of *C. richea* var. *linearis* Hook.f. from the western mountains of Tasmania is reviewed herein. Curtis (1963) did not discuss the status of this variety.

*Craspedia coolaminica* J.Everett & Joy Thomps. was described from material collected on mainland Australia and Tasmania, but the description of this species overlaps with that of both *C. richea* var. *linearis* and *C. gracilis*. To resolve the status of these taxa described by Hooker (1847), cibachromes of early Tasmanian collections of *Craspedia gracilis* and *C. richea* var. *linearis,* held at Kew, were obtained; and from the study of these images it is proposed that *C. coolaminica* and *C. richea* var. *linearis* are placed in synonymy under *C. gracilis*.

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## Taxonomy

### Craspedia gracilis Hook.f.

*Craspedia gracilis* Hook.f., *Lond. J. Bot.* 6: 118 (1847); *C. richea* Cass. [*nom. illeg.*] var. *gracilis* (Hook.f.) Hook.f., *Flora Tasmaniae* 3: 197 (1857); *C. glauca* var. *gracilis* (Hook.f.) W.M.Curtis *comb. invalid.*, *The Student's Flora of Tasmania* 2: 247 (1963). **Type citation:** "Middlesex plains; *Gunn*". **Type:** Tasmania. Middlesex Pl., 15 February 1837, [*R.C.*]*Gunn 835/1837* (lecto [here designated]: K *n.v.*, cibachrome at HO!). The specimen associated with the label on the right hand side of the plate is the lectotype (**Fig. 1**).

*Craspedia richea* Hook.f. [*nom. illeg.*] var. *linearis* Hook.f., *Lond. J. Bot.* 6: 118 (1847); *C. richea* Cass. [*nom. illeg.*] var. β *linearis* Hook.f., *Flora Tasmaniae* 3: 197 (1857). **synon. nov. Type citation:** "Western Mountains; *Gunn*". **Type:** Tasmania. Western Mountains, 17 February either 1842 or 1843 (as the year is not consistent on the label), [*R.C.*] *Gunn 1160/1842* (lecto [here designated]: K *n.v.*, cibachrome at HO!). The more complete specimen on the left hand side of the plate is the lectotype (**Fig. 2**).

*Craspedia coolaminica* J.Everett & Joy Thomps., **synon. nov.**, *Telopea* 5: 45 (1992). **Type:** New South Wales. SOUTHERN TABLELANDS: Happy Jacks, Snowy Mountains, near Happy Jacks Road, above sheep yard, 27 January 1964, *M.E.Phillips 20419* (holo: NSW *n.v.*; iso: CBG *n.v.*)

***Typification*:** In describing *Craspedia gracilis*, Hooker (1847) did not specify a numbered collection of Gunn's. The specimen *Gunn 835/1837* from Middlesex Plains comprises three individual plants and was examined by Hooker; hence, it is an appropriate choice for lectotypification of the name. A lectotype is chosen based on the right-hand specimen closest to the collector's label.

*Craspedia richea* var. *linearis* was described by Hooker (1847) as having narrowly linear leaves with arachnose hairs and known from the "Western Mountains", and although no specific locality, nor collector number were recorded a specimen in K, *Gunn 1160/1842*, dated 18 February 1843, is consistent with the limited published information. Notes on this herbarium sheet, in Ronald Campbell Gunn's handwriting, record it as *Craspedia*, but the note has been annotated by a later author with '*richea* var. *linearis*'. The narrowly linear leaves and silvery grey foliage are consistent with *C. gracilis*. Gunn's notes on the type of *C. richea* var. *linearis* records the florets as orange (**Fig. 2**), and while no orange-floreted species are known from Tasmania, the bright yellow flowers of *C. gracilis* approach an orange colour (**Fig. 3**). The combination, *C. richea* var. *linearis*, was only used by Hooker, so it seems very likely that this collection was examined by Hooker, and as it comes from the "Western Mountains" and was collected by Gunn, it is an appropriate choice for lectotypification of this name. As the herbarium sheet includes two similar-sized specimens and the right-hand specimen is more complete, it is designated as the lectotype.

Hooker (1857) in *Flora Tasmaniae*, considered *C. richea* var. β *linearis* as being restricted to the Western Mountains and referred a second collection (*Gunn 1160*) from Arthurs Lake to this variety. This collection (*Gunn 1160*) comprises four individual plants; all have long narrow silvery grey leaves with finely appressed hairs, and with arachnose hairs on the margin and are consistent with *C. gracilis* as defined herein.

### Mainland Australian and Tasmanian populations of *Craspedia gracilis*

*Craspedia gracilis* as defined here occurs in subalpine communities in New South Wales, Victoria and Tasmania (Everett & Thompson 1992; Schmidt-Lebuhn & Milner 2013; Rozefelds *pers. obs.*). Like many species of *Craspedia*, plants are often morphologically variable, with the size of the plants and the various organs (leaves, scapes, bracts on scape and compound head) phenotypically plastic. Material from Tasmania is variable in size from small herbs (like the type), to large, robust specimens 60 cm high (Rozefelds *pers. obs.*). The mainland material show a similar variation in size (Everett & Thompson 1992) and no morphological differences were noted

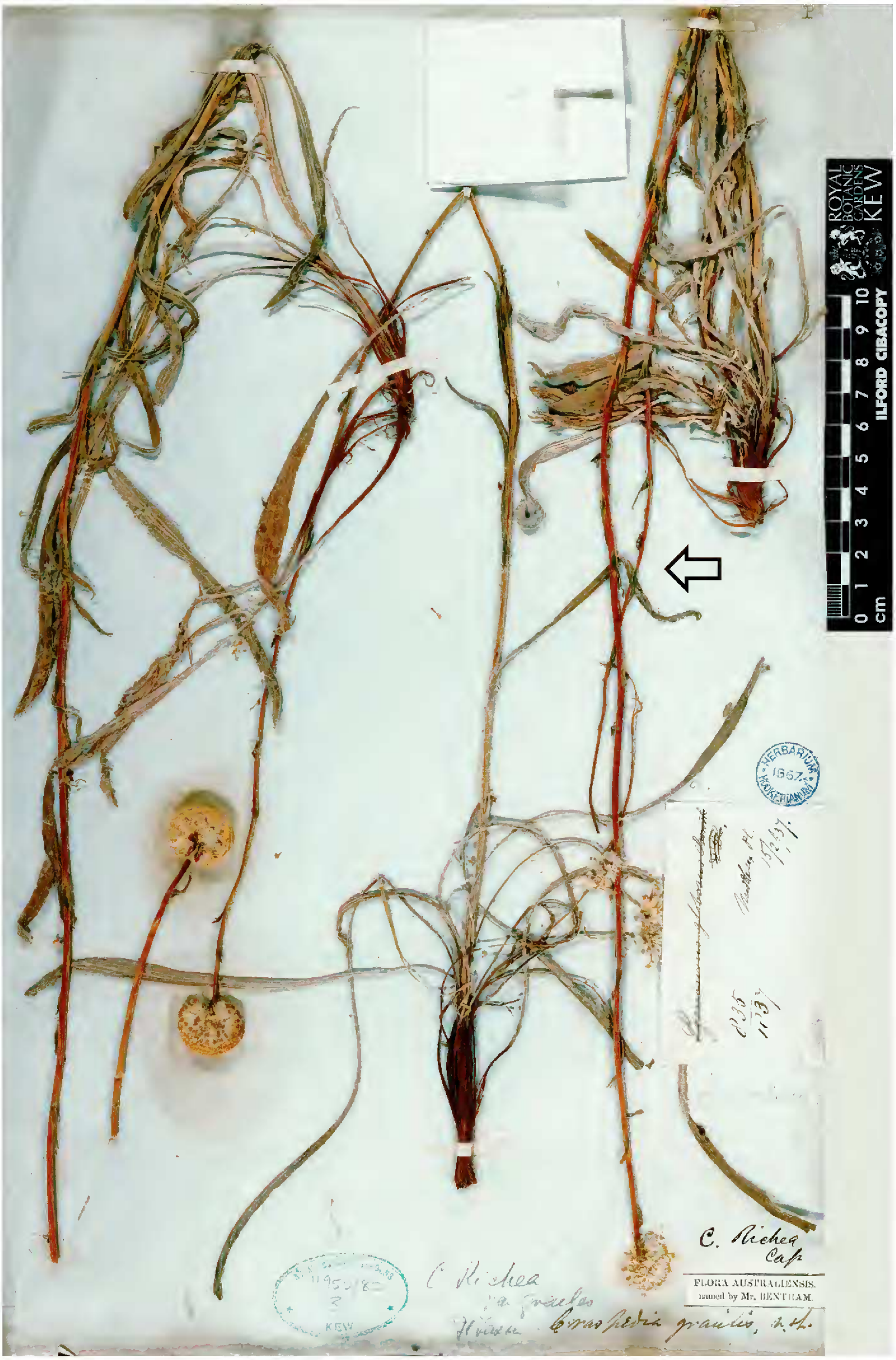
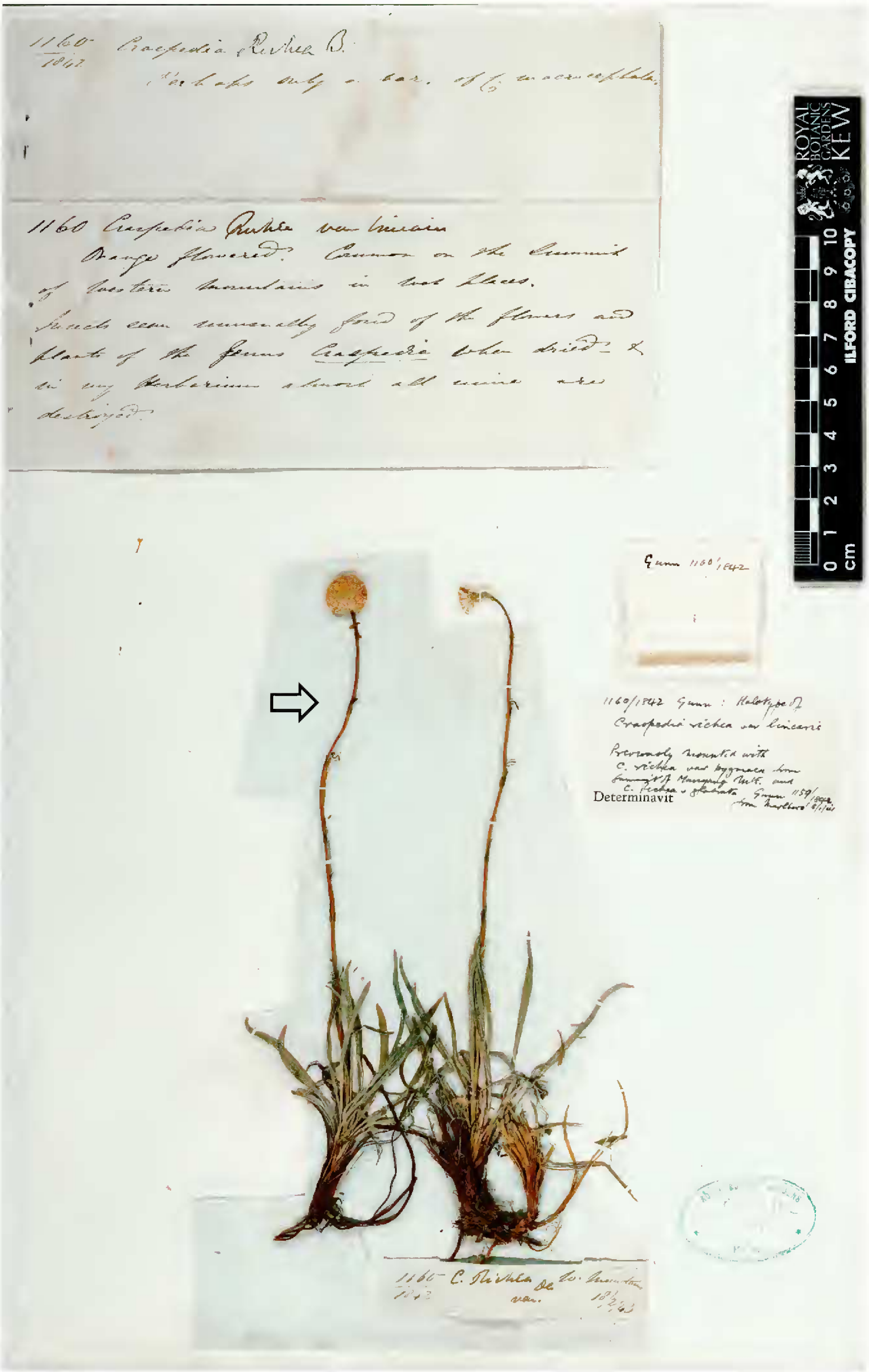

ROYAL BOTANIC GARDENS KEW
cm 0 1 2 3 4 5 6 7 8 9 10
ILFORD CIBACOPY
HERBARIUM HOOKERIANUM 1867.
835
1837
C. Richea
Cap.
FLORA AUSTRALIENSIS.
named by Mr. BENTHAM.
KEW
Craspedia gracilis, Hook. f.

**Fig. 1.** Lectotype of ***Craspedia gracilis*** Hook.f. (arrowed), *Gunn 835/1837* (K). The lectotype shows the typical narrow linear silvery grey leaves, fine hairs and secondary veins are clearly evident on the underside of the leaves. Reproduced by kind permission of the Board of Trustees of the Royal Botanic Gardens, Kew.



1160/1842 Craspedia Richea B.
Perhaps only a var. of C. macrocephala.

1160 Craspedia Richea var linearis
Orange flowered. Common on the summit of Western Mountains in wet places.
Insects seem universally fond of the flowers and plants of the genus Craspedia when dried & in my Herbarium almost all mine are destroyed.

Gunn 1160/1842

1160/1842 Gunn : Holotype of Craspedia richea var linearis
Previously mounted with C. richea var pygmaea from summit of [illegible] and C. richea v. glabrata Gunn 1159/1842 from [illegible] 6/1/[illegible]
Determinavit

1160/1842 C. Richea DC var. W. Mountains 18/2/43

**Fig. 2.** Lectotype of ***Craspedia richea*** Cass. var. β *linearis* Hook.f. (arrowed), *Gunn 1160* (K). Reproduced by kind permission of the Board of Trustees of the Royal Botanic Gardens, Kew.

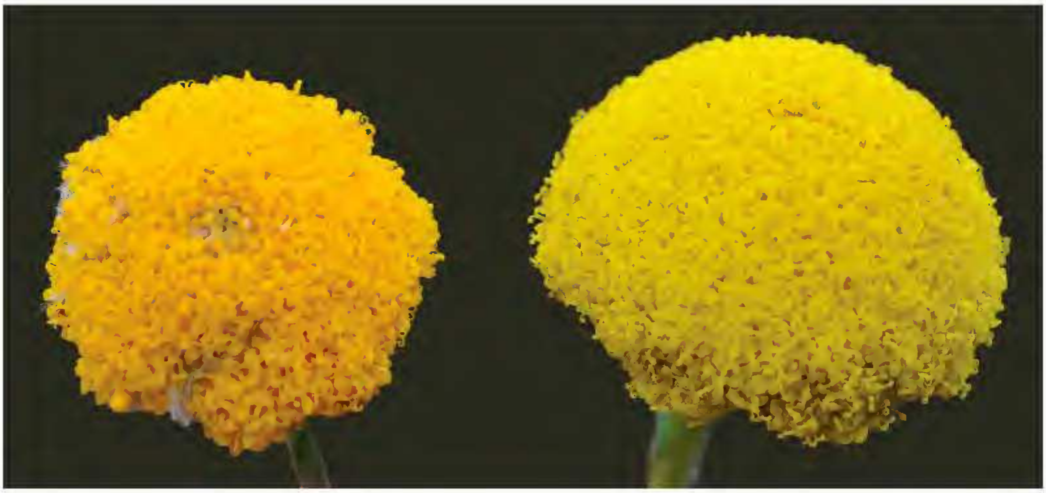


**Fig. 3.** Floret colour in ***Craspedia gracilis*** Hook.f (left hand inflorescence) compared with *C. rosulata* Rozefelds & A.M.Buchanan (right hand inflorescence).

between these mainland Australian and Tasmania populations by these authors in their original description.

Sequence data for mainland Australian and Tasmanian samples of *C. gracilis* (i.e. *C. coolaminica* in Ford *et al.* 2007) showed no variation in ITS, seven base differences in ETS, and in *psbA-trnH* there were two base differences and also two deletions in the Tasmanian specimen (Kerry Ford, *pers. comm.* 2013). There seems little justification based upon the current molecular data, and the overall similarities in morphology to support separation of mainland Australian and Tasmanian populations. As the two samples of *C. gracilis* were sister to each other in Ford *et al.* (2007) analysis, it also becomes an arbitrary decision, in a phylogenetic sense, as to whether they are considered conspecific or sister species.

## Discussion

The lectotype of *Craspedia gracilis* Hook.f. (*Gunn 835/1837*) has long linear, narrowly lanceolate leaves, fine appressed hairs that impart the silver grey foliage, secondary veins clearly visible on the underside of the leaves due in part to the appressed hairs on the veins, and arachnose hairs along the leaf margins.

The distinguishing features of *Craspedia coolaminica* J.Everett & Joy Thomps. (Everett & Thompson 1992; Rozefelds *et al.* 2011) easily distinguish this species from others in Tasmania, *viz.* distinctive basal rosette of long linear to narrowly attenuate silvery grey leaves that have a dense covering of long, fine appressed hairs, conspicuous secondary veins on the abaxial leaf surface, yellow corolla and mid-summer flowering (December–February). As no characters have been recognised that separate these taxa apart, I conclude that *C. coolaminica* and *C. richea* var. *linearis* are both synonyms of *C. gracilis*.

Dawson *et al.* (1999) attributed a chromosome count of $2n=44$ for *Craspedia gracilis* (as *C. glauca*; Kerry Ford *pers. comm.* 2010). Putative hybrids have been noted between *C. gracilis* and the typically earlier flowering *C. rosulata* Rozefelds & A.M.Buchanan which is sympatric with this species at Miena, Central Plateau and the two species overlap slightly in flowering time. Putative hybrids are robust plants and have bright yellow florets like *C. gracilis*, rather than the light yellow of *C. rosulata*, but lack the conspicuous silver grey indumentum of *C. gracilis*.

## Acknowledgements

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## References

Cassini, A.H.G. de (1818). Craspédie, Craspedia. In *Dictionnaire des sciences naturelles, dans lequel on traite méthodiquement des différens êtres de la nature.* Second Edition. F.G. Levrault: Strasbourg/ Le Normant: Paris.

Chapman, A.D. (1991). *Australian Plant Name Index A-C.* Australian Biological Resources Study: Canberra.

Curtis, W.M. (1963). *The Student's Flora of Tasmania, Part 2.* Government Printer: Hobart.

Dawson, M.I., Breitwieser, I. & Ward, J.M. (1999). Chromosome numbers in *Craspedia*, *Ewartia* and *Pterygopappus* (Compositae: Gnaphalieae). *Australian Systematic Botany* 12: 671–674.

Everett, J. & Thompson, J. (1992). New alpine and subalpine species in *Craspedia sens. strict.* (Asteraceae: Gnaphalieae). *Telopea* 5: 45–51.

Ford, K.A., Ward, J.M., Smissen, R.D., Wagstaff, S.J., Breitwieser, I. (2007) Phylogeny and biogeography of *Craspedia* (Asteraceae: Gnaphalieae) based on ITS, ETS and *psbA-trnH* sequence data. *Taxon* 56: 783–794.

Hooker, J.D. (1847). Florae Tasmaniae Spicilegium or Contributions towards a Flora of Van Diemens Land. *London Journal of Botany* 6: 106–125.

Hooker, J.D. (1857). *Botany of the Antarctic Voyage of H.M. Discovery ships Erebus and Terror in the years 1839–1843. Vol. 3. Flora Tasmaniae.* Lovell Reeve: London.

Labillardière, J.J.H. de (1800). *Relation du voyage a la recherche de La Pérouse, fait par ordre de L'assemblée Constituante, pendant les annies 1791, 1792, et pendants $1^{ere}$ la $2^{de}$ année de la Republique Francoise.* 2 Vols. H.J. Jansen: Paris.

Rozefelds, A.C. (2002). A new species and new combination in *Craspedia* (Asteraceae) from Tasmania. *Telopea* 9: 813–820.

Rozefelds, A.C., Buchanan, A.M. & Ford, K.A. (2011). New species of *Craspedia* (Asteraceae: Gnaphalieae) from Tasmania, and determination of the identity of *C. macrocephala* Hook. *Kanunnah* 4: 93–116.

Schmidt-Lebuhn, A.N. & Milner, K.V. (2013). A quantitative study of morphology in Australian *Craspedia* (Asteraceae: Gnaphalieae). *Australian Systematic Botany* 26: 238–254.

Sprengel, C.P.J. (1826). *Systema Vegetabilium 3.* Gottingae sumtibus librariae: Dieterichlanae.